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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,005	12/12/2000	Kazuyuki Ito	NEC 444	3384

7590

08/22/2002

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EXAMINER

GEBREMARIAM, SAMUEL A

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 08/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/735,005

Applicant(s)

ITO, KAZUYUKI

Examiner

Samuel A Gebremariam

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 33-36, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bothra US patent No. 6,010,939.

Regarding claim 33, Bothra teaches a method for manufacturing a semiconductor device comprising the steps of: forming a shallow trench isolation layer 206 in a semiconductor substrate 200, so that active areas 204 and a field area including dummy areas DA (dummy active) for isolating the active areas and forming gates 216 on the active areas and dummy gates 226 on the dummy areas (fig. 2B).

Bothra does not teach that the shape of the dummy area and/ or dummy gate is a polygon other than a square or a rectangle.

Polygonal shaped gates and dummy gates other than square and rectangle are conventional structures that are well known in the art of semiconductor processing.

It would be well within ordinary skill in the art to select other polygonal shape other than square and rectangle since some polygon structures allow for symmetrical arrangement of integrated circuit layout.

Regarding claim 34, Bothra teaches substantially the entire claimed method of claim 33 above except explicitly stating that the shape of the dummy area and/ or dummy gate is a circle.

Using the same argument as in claim 33, it would be well within ordinary skill in the art to select a circular gate and/ or dummy gate since a circular structure allow for symmetrical arrangement of integrated circuit layout.

Regarding claims 35 and 36, Bothra teaches substantially the entire claimed method of claim 33 above except explicitly stating that the dummy areas and or dummy gates are arranged in at least two rows and/ or two columns and the row is shifted from another and the row and/ or at least one column is shifted from another column.

It is conventional to arrange device structures in an array as claimed in order optimize the out put power with minimum area. In other words obtain a high packing density.

It would well within ordinary skill in the art to arrange the dummy gate and gate structures of Bothra's device in the conventional manner in order to obtain high packing density.

Response to Arguments

2. Applicant's arguments filed 6/6/02 have been fully considered but they are not persuasive.

Applicant argues that the shape of the dummy gates and gate structures is a not a matter of design choice but regards it as a matter of utility.

The examiner maintains the position that the claimed inventions 33-36 are obvious over applied prior art. As stated in the rejections of claims 33-36, the claimed shape of the gate and dummy structures are conventional shapes that are readily used in the art. For example Shimomura et al. (US, 6,140,687) teaches octagonal and circular shaped gate electrodes that are arranged in a ring shape gate electrode in order to attain high frequency characteristics.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the conventional gate and dummy gate structures that are polygonal and circular as suggested by Shimomura in the structure of Bothra since such structures allow for symmetrical arrangement of integrated circuit layout and also improve high frequency characteristics.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

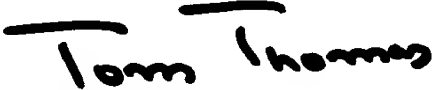
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Admassu Gebremariam whose telephone number is 703 305 1913. The examiner can normally be reached on 8:00am-4: 30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 305-7646. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Samuel Admassu Gebremariam
August 19, 2002


TOM THOMAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800